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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RTID 0648-XA134

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Alaska Marine Lines Lutak Dock Project, Haines, Alaska

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued an incidental harassment authorization (IHA) to Alaska Marine Lines, Inc. (AML) to incidentally harass, by Level A and Level B harassment, marine mammals during pile driving activities associated with the Lutak Dock Project in Haines, Alaska.

DATES: This authorization is effective from June 15, 2020 through June 14, 2021.

FOR FURTHER INFORMATION CONTACT: Dwayne Meadows, Ph.D., Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: <https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act>. In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the “take” of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed incidental take authorization may be provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other “means of effecting the least practicable adverse impact” on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as “mitigation”); and requirements pertaining to the mitigation, monitoring and reporting of the takings are set forth.

The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

Summary of Request

On 9 July 2019, NMFS received a request from AML for an IHA to take marine mammals incidental to Lutak Dock project in Haines, Alaska. The application was

deemed adequate and complete on October 23, 2019. AML's request is for take of seven species of marine mammals by Level B harassment and/or Level A harassment. Neither AML nor NMFS expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

Description of Specified Activity

The project consists of the demolition, re-construction, and improvement of a commercial barge cargo dock in Lutak Inlet near Haines, Alaska adjacent to the Haines Ferry Terminal. The project includes the following in-water components: removal (by pulling or cutting off at the mudline or using a vibratory hammer as a last resort) of 12 steel pipe piles (16 inch diameter) of two berthing dolphins associated with the existing steel cargo bridge; fill 4,000 yards (3058 cubic meters) of gravel and 1,000 yards (765 cubic meters) of riprap to construct a causeway below the new dock; installing below mean high water (MHW) a 46-foot (14 m) long by 15-foot (4.6 m) wide steel float; installing below MHW (using vibratory or impact pile driving or down-the-hole (DTH) drilling) four 24-inch diameter steel pipe piles to construct two float strut dolphins, six 36-inch diameter steel pipe piles to construct two breasting dolphins; and construction of a 40-foot (12 m) wide by 40-foot (12 m) long, pile supported (three 30-inch diameter steel pipe piles), concrete abutment within the causeway to support a 120-foot long (36.6 m) by 24-foot (7.3 m) wide steel bridge over navigable waters.

The pile driving/removal or DTH drilling can result in take of marine mammals from sound in the water which results in behavioral harassment or auditory injury. The footprint of the project is approximately one square mile (2.6 square km) around the

project site. The project will take no more than 8 days of pile-driving/removal or DTH drilling.

A detailed description of the planned project is provided in the **Federal Register** notice for the proposed IHA (84 FR 65117; November 26, 2019). Since that time, no changes have been made to the planned pile driving activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the description of the specific activity.

Comments and Responses

A notice of NMFS's proposal to issue an IHA to AML was published in the **Federal Register** on November 26, 2019 (84 FR 65117). That notice described, in detail, AML's activity, the marine mammal species that may be affected by the activity, and the anticipated effects on marine mammals. During the 30-day public comment period, NMFS received no public comments. A comment letter from the Marine Mammal Commission (Commission) was received outside of the public comment process pursuant to the Commission's authority to recommend steps it deems necessary or desirable to protect and conserve marine mammals (16 U.S. C. 1402.202(a)). We are obligated to respond to the Commission's recommendations within 120 days, and we do so below.

Comment 1: The Commission recommends that NMFS refrain from issuing renewals for any authorization and instead use its abbreviated **Federal Register** notice process.

Response: NMFS appreciates the streamlining achieved by the use of abbreviated **Federal Register** notices and intends to continue using them for proposed IHAs that include minor changes from previously issued IHAs, but which do not satisfy the renewal

requirements. However, our method for issuing renewals meets statutory requirements and maximizes efficiency, and we plan to continue considering requests for renewals.

Comment 2: The Commission recommends that NMFS stipulate that a renewal is a one-time opportunity in all **Federal Register** notices requesting comments on the possibility of a renewal, on its web page detailing the renewal process, and in all draft and final authorizations that include a term and condition for a renewal.

Response: NMFS thanks the Commission for its recommendation. Currently, **Federal Register** notices announcing proposed IHAs and the potential for a Renewal state, in the **SUMMARY** section, “NMFS is also requesting comments on a possible one-year renewal that could be issued under certain circumstances and if all requirements are met.” Further, no notice for any additional Renewal is included in the **Federal Register** Notice for proposed Renewals, so the current process already ensures that only one Renewal will be issued. We have revised the website to clarify some of the language around Renewal IHAs.

Comment 3: The Commission recommends that NMFS finish reviewing and finalize its recommended proxy source levels for both impact and vibratory installation of the various pile types and sizes.

Response: NMFS thanks the Commission for its recommendation.

Comment 4: The Commission recommends that NMFS require all applicants that propose to use a DTH hammer to install piles, conduct in-situ measurements and adjust the Level A and B harassment zones accordingly. They further recommend that we re-estimate the Level A harassment zones for DTH drilling based on source levels provided either by Reyff and Heyvaert (2019) or Denes *et al.* (2019) and NMFS’s Level A

harassment thresholds for impulsive sources and (2) increase the numbers of Level A harassment takes accordingly.

Response: We appreciate the Commission's concern about the rise of DTH drilling. We have received a number of in-situ measurements from prior projects, including Reyff and Heyvaert (2019) and Denes *et al.* (2019), and are currently evaluating those data to determine next steps to ensure marine mammals are adequately protected. We direct the Commission and other readers to our recent response to a similar Commission comment, which can be found at 85 FR 673 (January 7, 2020).

Comment 5: The Commission recommends that NMFS include in the **Federal Register** notice relevant site-specific information for harbor and Dall's porpoises, pertinent information regarding subsistence use of the various marine mammal species, whether AML's activities overlap in time and space with known hunting activities, whether the local Native Alaskan communities that hunt marine mammals were contacted, whether any concerns were conveyed, whether additional mitigation measures are warranted, and the requirement to report unauthorized taking (including injured and dead marine mammals) to the Alaska Regional Stranding Coordinator.

Response: The Commission did not note any specific information lacking for harbor and Dall's porpoises that would affect the proposed authorization so we have not added any additional information to this notice. We note that the proposed IHA referred readers to the Stock Assessment Reports and other information on these and the other species on our website. AML contacted local Native Alaskan communities and updated the subsistence use section of their application accordingly, and we include this new

information below. We note the appropriate local Alaska Regional contact for unauthorized take was in our proposed IHA.

Comment 6: The Commission recommends that NMFS include in the notice and final authorization, if issued, the requirements to extrapolate Level A harassment takes to unobserved portions of the Level A harassment zone, similar to Level B harassment takes and to keep a running tally of total Level A and B harassment takes based on both observed and extrapolated takes.

Response: We clarify in this notice and final authorization the requirement for AML to extrapolate Level A harassment takes to unobserved portions of the Level A harassment zone, if necessary. With regard to keeping a running tally of total Level A and B harassment takes, we agree that the applicant must ensure they do not exceed authorized takes.

Comment 7: The Commission recommends that NMFS re-estimate the Level B harassment zone for impact installation of 36-in piles based on the source level of 193 dB re 1 μ Pa at 10 m as provided in Caltrans (2015) and consistent with the other source level metrics.

Response: AML chose to use the more conservative source level of 194 dB re 1 μ Pa at 10 m as provided in Denes *et al.* (2016) because this reference is based on local conditions more similar to the current project. We support the use of the more conservative source level of Denes (2016).

Changes from the Proposed IHA to Final IHA

A new paper was published that provided updated estimates of the proportion of western Distinct Population Segment (DPS) Steller sea lions occurring in different parts

of the range of the eastern DPS of Steller sea lions in Alaska (Hastings *et al.*, 2020). For the area of this project the estimate declined from 2 percent to 1.4 percent. We used the updated 1.4 percent value to calculate the share of take for the two DPSs. The final take numbers are thus 1291 for the eastern DPS and 18 for the western DPS.

New information also became available for the abundance of humpback whales in the area. We used that to calculate density and estimate take, though in the end, take did not change from the proposed authorization.

Minor clarifications have been made to language regarding pile removal methods in the **Description of Specified Activity** section. In the **Estimated Take** section we clarified the use of Denes *et al.* (2016) to calculate the Level B harassment zones for impact pile driving as this reference is based on local conditions more similar to the current project and is a more conservative estimate. We also clarified in that section the method for determining a combined source level for vibratory and DTH drilling. As a result of the ESA Section 7 Biological Opinion the mitigation requirement not to recommence pile driving is extended to 30 minutes for ESA listed species and there are additional reporting requirements for take of ESA listed species. We clarify in the **Monitoring and Reporting** section of this notice and final authorization the requirement for AML to extrapolate Level A harassment takes to unobserved portions of the Level A harassment zone, if necessary. Additional details on subsistence use and consultations with local Native Alaskan communities are provided in the **Effects of Specified Activities on Subsistence Uses of Marine Mammals** section of their application accordingly and we included those herein.

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS's Stock Assessment Reports (SARs; <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>) and more general information about these species (*e.g.*, physical and behavioral descriptions) may be found on NMFS's website (<https://www.fisheries.noaa.gov/find-species>).

Table 1 lists all species with expected potential for occurrence in Haines, Alaska and summarizes information related to the population or stock, including regulatory status under the MMPA and ESA and potential biological removal (PBR), where known. For taxonomy, we follow Committee on Taxonomy (2019). PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS's SARs). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS's stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S.

waters. All managed stocks in this region are assessed in NMFS's U.S. Alaska SARs (e.g., Muto *et al.*, 2019). All values presented in Table 1 are the most recent available at the time of publication and are available in the draft 2019 SARs (Muto *et al.*, 2019).

Table 1 -- Marine Mammals Potentially Present in the Vicinity of the Study Areas

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N) ¹	Stock abundance (CV, N _{min} , most recent abundance survey) ²	PBR	Annual M/SI ³
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)						
Family Physeteridae						
Sperm whale	<i>Physeter macrocephalus</i>	North Pacific	-; N	N/A (see SAR, N/A, 2015), see text	See SAR	4.4
Family Balaenopteridae (rorquals)						
Humpback Whale	<i>Megaptera novaeangliae</i>	Central North Pacific	-;N (Hawaii DPS)	10,103 (0.3, 7,890, 2006)	83	25
		Central North Pacific	T,D,Y (Mexico DPS)	3264	N/A	N/A
Minke whale ⁴	<i>Balaenoptera acutorostrata</i>	Alaska	-; N	N/A, see text	N/A	0
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae						
Killer whale ⁵	<i>Orcinus orca</i>	Alaska Resident Northern Resident West Coast transient	-; Y	2347 261 243	24 1.96 2.4	1 0 0
Family Phocoenidae (porpoises)						
Dall’s porpoise ⁴	<i>Phocoenoides dalli</i>	Alaska	-;N	83,400 (0.097, N/A, 1991)	N/A	38
Harbor porpoise	<i>Phocoena phocoena</i>	Southeast Alaska	-; Y	975 (2012)	8.9	34
Order Carnivora – Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions)						
California sea lion	<i>Zalophus californianus</i>	U.S.	-; N	257,606 (N/A,233,515, 2014)	14,011	>320
Steller sea lion	<i>Eumetopias jubatus</i>	Eastern U.S.	-; N	41,638 (n/a; 41,638; 2015)	2,498	108
Steller sea lion	<i>Eumetopias jubatus</i>	Western U.S.	E,D,Y	54,268 (see SAR, 54,267, 2017)	326	247
Family Phocidae (earless seals)						
Harbor seal	<i>Phoca vitulina richardii</i>	Lynn Canal/Stephens Passage	-; N	9,478 (see SAR, 8,605, 2011)	155	50

1 - Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

2- NMFS marine mammal stock assessment reports online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance. In some cases, CV is not applicable

3 - These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (e.g., commercial fisheries, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range. A CV associated with estimated mortality due to commercial fisheries is presented in some cases.

4 - The most recent abundance estimate is >8 years old, there is no official current estimate of abundance available for this stock.

5 - NMFS has preliminary genetic information on killer whales in Alaska which indicates that the current stock structure of killer whales in Alaska needs to be reassessed. NMFS is evaluating the new genetic information. A complete revision of the killer whale stock assessments will be postponed until the stock structure evaluation is completed and any new stocks are identified" (Muto, Helker et al. 2018). For the purposes of this IHA application, the existing stocks are used to estimate potential takes.

All species that could potentially occur in the planned project area are included in Table 1. As described below, all 7 species (with 10 managed stocks) temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur, and we have authorized it.

A detailed description of the of the species likely to be affected by AML's planned project, including brief introductions to the species and relevant stocks as well as available information regarding population trends and threats, and information regarding local occurrence, were provided in the **Federal Register** notice for the proposed IHA (84 FR 65117; November 26, 2019); since that time, we are not aware of any changes in the status of these species and stocks; therefore, detailed descriptions are not provided here. Please refer to that **Federal Register** notice for these descriptions. Please also refer to NMFS' website (<https://www.fisheries.noaa.gov/find-species>) for generalized species accounts.

Potential Effects of Specified Activities on Marine Mammals and their Habitat

The effects of underwater noise from pile installation and removal activities for the Lutak Dock Project have the potential to result in behavioral harassment of marine mammals in the vicinity of the action area. The **Federal Register** notice for the proposed

IHA (84 FR 65117; November 26, 2019) included a discussion of the effects of anthropogenic noise on marine mammals, therefore that information is not repeated here; please refer to the **Federal Register** notice (84 FR 65117; November 26, 2019) for that information.

The main impact associated with the Lutak Dock Project would be temporarily elevated sound levels and the associated direct effects on marine mammals. The project would not result in permanent impacts to habitats used directly by marine mammals, such as haulout sites, but may have potential short-term impacts to food sources such as forage fish, and minor impacts to the immediate substrate during installation and removal of piles during the planned project. These potential effects are discussed in detail in the **Federal Register** notice for the proposed IHA (84 FR 65117; November 26, 2019), therefore that information is not repeated here; please refer to that **Federal Register** notice for that information.

Estimated Take

This section provides an estimate of the number of incidental takes for authorization through this IHA, which will inform both NMFS' consideration of "small numbers" and the negligible impact determination.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal

stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes would primarily be by Level B harassment, as use of the acoustic source (*i.e.*, vibratory or impact pile driving or DTH drilling) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result, primarily for mysticetes, high frequency species and pinnipeds because predicted auditory injury zones are larger than for mid-frequency species. Auditory injury is unlikely to occur for mid-frequency species. The mitigation and monitoring measures are expected to minimize the severity of the taking to the extent practicable.

As described previously, no mortality is authorized for this activity. Below we describe how the take is estimated.

Generally speaking, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these basic factors can contribute to a basic calculation to provide an initial prediction of takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.*, previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the take estimate.

Acoustic Thresholds

Using the best available science, NMFS has developed acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur Permanent Threshold Shift (PTS) of some degree (equated to Level A harassment).

Level B Harassment for non-explosive sources – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.*, frequency, predictability, duty cycle), the environment (*e.g.*, bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.*, 2007, Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 dB re 1 microPascal (μPa) (root mean square (rms)) for continuous (*e.g.*, vibratory pile-driving, drilling) and above 160 dB re 1 μPa (rms) for non-explosive impulsive (*e.g.*, impact pile driving) or intermittent (*e.g.*, scientific sonar) sources.

AML's planned activity includes the use of continuous (vibratory pile-driving, drilling) and impulsive (impact pile-driving) sources, and therefore the 120 and 160 dB re 1 μPa (rms) thresholds are applicable.

Level A harassment for non-explosive sources - NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). AML's activity includes the use of impulsive (impact pile-driving) sources.

These thresholds are provided in Table 2. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2018 Technical Guidance, which may be accessed at

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance>.

Table 2 -- Thresholds Identifying the Onset of Permanent Threshold Shift

	PTS Onset Acoustic Thresholds[*] (Received Level)	
Hearing Group	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	<i>Cell 1</i> $L_{pk,flat}$: 219 dB $L_{E,LF,24h}$: 183 dB	<i>Cell 2</i> $L_{E,LF,24h}$: 199 dB
Mid-Frequency (MF) Cetaceans	<i>Cell 3</i> $L_{pk,flat}$: 230 dB $L_{E,MF,24h}$: 185 dB	<i>Cell 4</i> $L_{E,MF,24h}$: 198 dB
High-Frequency (HF) Cetaceans	<i>Cell 5</i> $L_{pk,flat}$: 202 dB $L_{E,HF,24h}$: 155 dB	<i>Cell 6</i> $L_{E,HF,24h}$: 173 dB
Phocid Pinnipeds (PW) (Underwater)	<i>Cell 7</i> $L_{pk,flat}$: 218 dB $L_{E,PW,24h}$: 185 dB	<i>Cell 8</i> $L_{E,PW,24h}$: 201 dB
Otariid Pinnipeds (OW) (Underwater)	<i>Cell 9</i> $L_{pk,flat}$: 232 dB $L_{E,OW,24h}$: 203 dB	<i>Cell 10</i> $L_{E,OW,24h}$: 219 dB

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

Note: Peak sound pressure (L_{pk}) has a reference value of 1 μPa , and cumulative sound exposure level (L_E) has a reference value of 1 $\mu\text{Pa}^2\text{s}$. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript “flat” is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (i.e., varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds, which include source levels and transmission loss coefficient.

Even though multiple pile sizes will be used, to be conservative for calculation of take, we assumed all piles would be the largest size pile (36 inch). It is also likely that impact and vibratory pile driving will occur on the same day, so we calculate Level B take assuming the larger vibratory disturbance isopleths for every day of activity. For vibratory pile driving we assumed a source level of 175 dB (RMS SPL) based on Caltrans (2015) with a maximum of five piles per day and 60 minutes per pile. For DTH drilling we used a source level of 171 dB (RMS SPL); this is derived from Denes *et al.* (2016), where we used the more conservative 90 percent median value. We assumed no more than two piles per day with DTH drilling as the duration per pile was assumed to be 3 hours. For impact pile driving activities we used source levels of 210 dB (PK SPL) or 183 dB (single strike SEL) based on Caltrans (2015) and 194 dB (RMS SPL) from Denes *et al.* (2016), to be conservative. We assumed no more than five piles per day and 700

strikes per pile. In all cases we used a propagation loss coefficient of $15 \log R$ as most appropriate for these stationary, in-shore sources. Because DTH would only be used in combination with vibratory pile driving, we also used a combined scenario that assumed 4 hours of vibratory pile driving plus 6 hours of DTH drilling in a single day. For this scenario the source level was calculated by converting the source levels from dB before averaging and then re-converting the result to dB again. This is thus not a direct arithmetic average of all the hourly levels in decibels and could be described as the energy equivalent average level over 10 hours of activity.

When the NMFS Technical Guidance (2016) was published, in recognition of the fact that ensonified area/volume could be more technically challenging to predict because of the duration component in the new thresholds, we developed a User Spreadsheet that includes tools to help predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to help predict takes. We note that because of some of the assumptions included in the methods used for these tools, we anticipate that isopleths produced are typically going to be overestimates of some degree, which may result in some degree of overestimate of Level A harassment take. However, these tools offer the best way to predict appropriate isopleths when more sophisticated 3D modeling methods are not available, and NMFS continues to develop ways to quantitatively refine these tools, and will qualitatively address the output where appropriate. For stationary sources, such as pile driving and drilling in this project, NMFS User Spreadsheet predicts the distance at which, if a marine mammal remained at that distance the whole duration of the activity, it would incur PTS. Inputs used in the User Spreadsheet, and the resulting isopleths are reported below.

NMFS User spreadsheet input scenarios for vibratory pile driving, impact pile driving, and the combined DTH drilling and vibratory pile driving scenario discussed above are shown in Table 3. These input scenarios lead to PTS isopleth distances (Level A thresholds) of anywhere from 7 to 2742 meters, depending on the marine mammal group and scenario (Table 4). Table 4 also shows the daily ensonified areas (Level A harassment zones) to the PTS threshold distances for each scenario and marine mammal group; these vary from just a few square meters to 8.736 km².

Table 3 -- NMFS User Spreadsheet Inputs

USER SPREADSHEET INPUT			
	Vibratory pile driving	Impact pile driving	DTH/ vibratory pile driving
Spreadsheet Tab Used	A.1) Vibratory pile driving	E.1) Impact pile driving	A.1) Vibratory pile driving
Source Level (RMS SPL or single strike SEL)	175	183 SELss, 194 SPLrms	173
Weighting Factor Adjustment (kHz)	2.5	2	2.5
a) Number of strikes per pile	N/A	700	N/A
a) Activity Duration (h) within 24-h period	5	N/A	10
Propagation (xLogR)	15	15	15
Distance of source level measurement (meters)	10	10	10
Number of piles per day	5	5	2.5

Table 4 -- NMFS User Spreadsheet Outputs: PTS Isopleths and Daily Ensonified Area

USER SPREADSHEET OUTPUT					
	PTS Isopleth (meters)				
Source Type	Low-Frequency Cetaceans	Mid-Frequency Cetaceans	High-Frequency Cetaceans	Phocid Pinnipeds	Otariid Pinnipeds
Vibratory pile driving	171	15	253	104	7
Impact pile driving	2302	82	2742	1232	90
DTH/ vibratory pile driving	200	18	296	122	9
	Daily ensonified area (km ²)				
Vibratory pile driving	0.056	0.001	0.113	0.025	0

Impact pile driving	6.899	0.017	8.736	2.369	0.02
DTH/ vibratory pile driving	0.074	0.001	0.151	0.032	0

The distances to the Level B threshold of 120 dB RMS are 28.8 miles (46.3 km) for vibratory pile driving and 0.98 miles (1.58 km) for impact driving. The enclosed nature of Lutak Inlet restricts the propagation of noise in all directions before noise levels reduce below the Level B threshold for continuous source types (*i.e.*, vibratory pile driving, DTH). Therefore, the area ensonified to the Level B threshold is truncated by land in all directions. Measurements of the ensonified areas show that 5.179 km² are ensonified to the Level B threshold for impact pile driving and 22.164 km² are ensonified to the Level B threshold for vibratory pile driving. Note that thresholds for behavioral disturbance are unweighted with respect to marine mammal hearing and therefore the thresholds apply to all species.

Marine Mammal Occurrence

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations. The density of six of the seven marine mammal species (except humpback whales, see below) for which take is authorized is calculated by month in the project area (see Table 6-4 in the application) for months when project activity is planned to occur (June through October). Density was estimated using available survey data, literature, sightings from protected Species observers (PSOs) from other projects, personal communication from researchers, state and Federal biologists, average group size (*i.e.*, killer whales, Dall's porpoise) and the data underlying the IHA issued by NMFS for the ADOT&PF Haines Ferry Terminal Project (NMFS, 2018b). Density estimates were calculated by dividing the estimated

monthly abundance for each species by the area of marine mammal habitat near the project, which is approximately 91.3 km² and extends from Lutak Inlet/Chilkat River south down Lynn Canal to the Gran Point haulout. In order to be conservative, even though pile driving could occur at any period from June through October, for purposes of requesting takes, we used the highest monthly density for each species to calculate take. For killer whales and Dall's porpoises we calculated density by assuming a minimum group size of 5 and 10 animals, respectively, might enter the ensonified area, rather than their lower density value, because of the social nature of these species. Thus the species densities used in our take calculations are shown in Table 5.

A very small number of humpback whales were recorded on the sea lion surveys near Gran Point (low single digits), representing our only non-anecdotal source of locally-obtained abundance data. Various reports, both anecdotal and from these surveys, put the number of humpback whales present near the project area in the single digits (NMFS, 2017; ECO49, 2019 (the application)). We estimate that the number of whales that may encounter project sound per day is likely about one per day. Sometimes, a breeding female whale with a calf may pass by, increasing a particular day's total whale exposure rate from one to two. Because this operation will continue for up to 8 days, we estimate no more than 10 whales total might enter the ensonified area during the project.

Table 5 -- Species Density Values Used to Calculate Take

Species	Density (#/km ²)
Minke Whale	0.022
Killer Whale	0.055
Harbor Porpoise	0.055
Dall's Porpoise	0.11
Harbor Seal	1.095
Steller Sea Lion	7.382

Take Calculation and Estimation

Here we describe how the information provided above is brought together to produce a quantitative take estimate. We estimated Level A take for the project by multiplying the maximum monthly species density for the species with data from Table 5 by the daily ensonified area for PTS for Level A from Table 4 above and then multiplying by the maximum possible number of work days (8) and finally rounding to the next whole number (Table 6). We similarly estimated Level B take for the project by multiplying the maximum monthly species density from Table 5 by the ensonified area for Level B (22.164 km²) and then multiplying by the maximum possible number of work days (8) and finally rounding to the next whole number. Estimated Level A takes from Table 6 were then subtracted from the preliminary Level B takes to get the total number of unique Level B takes that do not double-count the Level A takes (Table 6).

For humpback whales we estimated above no more than 10 whales total may encounter project sound at Level B Harassment levels; thus our total take is estimated to be 10 whales. Of these 10 whales, 6.1 percent are expected to be of the ESA listed entity, or about 0.6 whales, which we conservatively round up to one ESA listed Mexico DPS whale exposed to Level B acoustic harassment. The remaining nine takes are of the Hawaii DPS whales. No Level A harassment is expected for ESA-listed humpbacks due to the very small total number of humpbacks that are expected to be exposed. Given the size of the daily ensonified area for PTS for Level A from Table 4 above, we estimate three of the takes of the Hawaii DPS of humpback whales will be Level A takes, leaving six Level B takes for the Hawaii DPS and seven overall for the species (Table 6).

Table 6 -- Authorized Level A and B Take and Percent of MMPA Stock to Be Taken

	Authorized Take		
Species	Level B	Level A	% of Stock
Humpback Whale ¹	7	3	0.1
Minke Whale	2	2	N/A
Killer Whale ²	10	0	0.35
Harbor Porpoise	6	4	1.03
Dall's Porpoise	12	8	N/A
Harbor Seal	174	21	2.06
Steller Sea Lion (Eastern DPS) ^{2, 3}	1291	0	3.1
Steller Sea Lion (Western DPS) ^{2, 3}	18	0	0.03

1 – Distribution of take by ESA status is 6 Level B takes and 3 Level A takes for Hawaii DPS and 1 Level B take for Mexico.

2 - The potential for these species to experience PTS due to vibratory/impact driving or from DTH drilling is very low considering the distances to the PTS thresholds and the species behavior. Shutdown for all species is at 200 m (see below) which would further decrease possibility of Level A takes for these species. Therefore, Level A takes are not authorized.

3- Total estimated take of Steller sea lions was 1309 individuals. Distribution between the stocks was calculated assuming 1.4 percent Western DPS and rounding to nearest whole number.

Effects of Specified Activities on Subsistence Uses of Marine Mammals

The availability of the affected marine mammal stocks or species for subsistence uses may be impacted by this activity. The subsistence uses that may be affected and the potential impacts of the activity on those uses are described below. The information from this section is analyzed to determine whether the necessary findings may be made in the **Unmitigable Adverse Impact Analysis and Determination** section.

No records exist of subsistence harvests of whales and porpoises in Lynn Canal (Haines, 2007). Subsistence harvest of harbor seals and Steller sea lions by Alaska Natives is not prohibited by the MMPA. The ADF&G has regularly conducted surveys of harbor seal and Steller sea lion subsistence harvest in Alaska and the number of animals taken for subsistence in this immediate area is low when compared to other areas in

Southeast Alaska (Wolfe *et al.*, 2013). Marine mammals comprise less than 1 pound (0.45 kg) per capita of all resources harvested by Haines residents (Household Survey of Wildfoods Resources Harvest in Haines, as cited in Haines, 2007). Construction activities at the project site would be expected to cause only short term, non-lethal disturbance of marine mammals. Impacts on the abundance or availability of either species to subsistence hunters in the region are not anticipated.

Mitigation

In order to issue an IHA under Section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses. NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, we carefully consider two primary factors:

(1) the manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat, as well as subsistence uses. This considers the nature

of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned), the likelihood of effective implementation (probability implemented as planned), and;

(2) the practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

In addition to the measures described later, AML is required to employ the following mitigation measures:

- *Schedule*: No pile driving or removal would occur from March 1 through May 31 to avoid peak marine mammal abundance periods and critical foraging periods;
- *Pile Removal*: If possible, piles must be removed by using a direct pull method or by cutting piles off at the mudline instead of using a vibratory hammer;
- *Pile Driving Delay/Shut-Down*: For use of in-water heavy machinery/vessel (*e.g.*, use of barge-mounted excavators, or dredging), AML will implement a minimum shutdown zone of 10 m radius around the pile/vessel. For vessels, AML must cease operations and reduce vessel speed to the minimum required to maintain steerage and safe working conditions. In addition, if an animal comes within 200 m of a pile being driven or removed, AML would shut down. The 200 m shutdown zone would only be reopened when a marine mammal has not been observed within the shutdown zone for a 15-minute period (30 minutes for ESA listed humpback whales and Steller sea lions). If pile driving is stopped, pile installation would not commence if pile

any marine mammals are observed anywhere within the Level A harassment zone (Table 7). Pile driving activities would only be conducted during daylight hours when it is possible to visually monitor for marine mammals. If poor environmental conditions restrict visibility (*e.g.*, from excessive wind or fog, high Beaufort state), pile installation would be delayed. If a species for which authorization has not been granted, or if a species for which authorization has been granted but the authorized takes are met, AML would delay or shut-down pile driving if the marine mammal approaches or is observed within the Level A and/or B harassment zones. In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the IHA, such as serious injury or mortality, the PSO on watch would immediately call for the cessation of the specified activities and immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and NMFS Alaska Regional Office;

Table 7 -- Level A Harassment Zones (m) for Each Project Activity

Hearing Group	Vibratory	DTH	Combined Vibratory + DTH	Impact
Low Frequency Cetaceans	200*	200*	200*	1400
Mid-Frequency Cetaceans	200*	200*	200*	200*
High Frequency Cetaceans	253	200*	296	2700
Phocids	200*	200*	200*	1200
Otarids	200*	200*	200*	200*

*Actual zone distance is less, but 200-m shutdown zone takes precedence.

- *Soft-start:* For all impact pile driving, a “soft start” technique will be used at the beginning of each pile installation day, or if pile driving has ceased for more than 30 minutes, to allow any marine mammal that may be in the immediate area to leave

before hammering at full energy. The soft start requires AML to provide an initial set of three strikes from the impact hammer at reduced energy, followed by a one-minute waiting period, then two subsequent reduced energy strike sets. If any marine mammal is sighted within the 200-m Level A shutdown zone prior to pile-driving, or during the soft start, AML will delay pile-driving until the animal is confirmed to have moved outside and is on a path away from the Level A harassment zone or if 15 minutes have elapsed since the last sighting; and

- *Other best management practices:* AML will drive all piles with a vibratory hammer to the maximum extent possible (*i.e.*, until a desired depth is achieved or to refusal) prior to using an impact hammer and will use DTH drilling prior to using an impact hammer. AML will also use the minimum hammer energy needed to safely install the piles.

Based on our evaluation of the applicant's proposed measures, NMFS has determined that the mitigation measures provide the means effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for subsistence uses.

Monitoring and Reporting

In order to issue an IHA for an activity, Section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104(a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species

and of the level of taking or impacts on populations of marine mammals that are expected to be present in the planned action area. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.*, presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.*, source characterization, propagation, ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and
- Mitigation and monitoring effectiveness.

Visual Monitoring

Monitoring would be conducted 30 minutes before, during, and 30 minutes after pile driving and removal activities. In addition, observers shall record all incidents of marine mammal occurrence, regardless of distance from activity, and shall document any behavioral reactions in concert with distance from piles being driven or removed. Pile driving activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than 30 minutes.

A primary PSO must be placed at Lutak Dock where pile driving would occur. The primary purpose of this observer is to monitor and implement the 200 m Level A shutdown zone. Two additional observers must focus on monitoring large parts of the Level B harassment zone as well as visible parts of the Level A shutdown and harassment zones. The second observer must be placed at a vantage point near Tanani Point that allows monitoring of the area offshore from Lutak Dock and across the inlet, a width of about 0.6 miles (1 km, see application Figure 11-1). This location is near the edge of the Level A harassment zone for low-frequency cetaceans during impact pile driving. The third PSO must be placed northwest of the dock near the edge of the Level A harassment zone for low-frequency cetaceans. Therefore, the outer edge of the largest Level A harassment zone and a majority of the Level B harassment zone would be monitored by these other two PSOs. These two PSOs must also assess movement of animals within Level A harassment zones, including time spent at various distances from the sound source to help us gather needed information on the dynamics of marine mammal behavior around pile driving activities. Since not all of the level A or B harassment zones will be observable by PSOs, they will calculate take for the project by extrapolating the

observable area to the total size of the Level A or B harassment zone, as needed. PSOs would scan the waters using binoculars, and/or spotting scopes, and would use a handheld GPS or range-finder device to verify the distance to each sighting from the project site. All PSOs would be trained in marine mammal identification and behaviors and are required to have no other project-related tasks while conducting monitoring. The following measures also apply to visual monitoring:

(1) Monitoring will be conducted by qualified observers, who will be placed at the best vantage point(s) practicable to monitor for marine mammals and implement shutdown/delay procedures when applicable by calling for the shutdown to the hammer operator. Qualified observers are trained biologists, with the following minimum qualifications:

(a) Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance; use of binoculars may be necessary to correctly identify the target;

(b) Advanced education in biological science or related field (undergraduate degree or higher required);

(c) Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience);

(d) Experience or training in the field identification of marine mammals, including the identification of behaviors;

(e) Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;

(f) Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates and times when in-water construction activities were suspended to avoid potential incidental injury from construction sound of marine mammals observed within a defined shutdown zone; and marine mammal behavior; and

(g) Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary; and

(2) AML shall submit observer CVs for approval by NMFS.

A draft marine mammal monitoring report would be submitted to NMFS within 90 days after the completion of pile driving and removal activities, or 60 days prior to a requested date of issuance of any future IHAs for projects at the same location, whichever comes first. It will include an overall description of work completed, a narrative regarding marine mammal sightings, and associated marine mammal observation data sheets. Specifically, the report must include:

- Dates and times (begin and end) of all marine mammal monitoring;
- Construction activities occurring during each daily observation period, including how many and what type of piles were driven or removed and by what method (*i.e.*, impact or vibratory);
- Weather parameters and water conditions during each monitoring period (*e.g.*, wind speed, percent cover, visibility, sea state);
- The number of marine mammals observed, by species, relative to the pile location and if pile driving or removal was occurring at time of sighting;

- Age and sex class, if possible, of all marine mammals observed;
- PSO locations during marine mammal monitoring;
- Distances and bearings of each marine mammal observed to the pile being driven or removed for each sighting (if pile driving or removal was occurring at time of sighting);
- Description of any marine mammal behavior patterns during observation, including direction of travel;
- Number of individuals of each species (differentiated by month as appropriate) detected within the monitoring zone, and estimates of number of marine mammals taken, by species (a correction factor may be applied to total take numbers, as appropriate);
- Detailed information about any implementation of any mitigation triggered (*e.g.*, shutdowns and delays), a description of specific actions that ensued, and resulting behavior of the animal, if any;
- Description of attempts to distinguish between the number of individual animals taken and the number of incidences of take, such as ability to track groups or individuals; and
- An extrapolation of the estimated takes by Level A or B harassment based on the number of observed exposures within the Level A or B harassment zone and the percentage of the Level A or B harassment zone that was not visible, when applicable.

If no comments are received from NMFS within 30 days, the draft final report

will constitute the final report. If comments are received, a final report addressing NMFS comments must be submitted within 30 days after receipt of comments.

In addition, AML must develop and submit to NMFS Alaska Region a digital spreadsheet that specifies the date and start/stop times each pile was removed/installed; the method(s) used to remove/install each pile; the size of each pile; and any other information which may be useful in aiding the assessment of effects of different pile driving activities on ESA-listed species.

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the IHA (if issued), such as an injury, serious injury or mortality, AML would immediately cease the specified activities and report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the Alaska Regional Stranding Coordinator. The report would include the following information:

- Description of the incident;
- Environmental conditions (*e.g.*, Beaufort sea state, visibility);
- Description of all marine mammal observations in the 24 hours preceding the incident;
- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s) (if equipment is available).

Activities would not resume until NMFS is able to review the circumstances of the prohibited take. NMFS would work with AML to determine what is necessary to

minimize the likelihood of further prohibited take and ensure MMPA compliance. AML would not be able to resume their activities until notified by NMFS via letter, email, or telephone.

In the event that AML discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (*e.g.*, in less than a moderate state of decomposition as described in the next paragraph), AML would immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS Alaska Stranding Hotline and/or by email to the Alaska Regional Stranding Coordinator. The report would include the same information identified in the paragraph above. Activities would be able to continue while NMFS reviews the circumstances of the incident. NMFS would work with AML to determine whether modifications in the activities are appropriate.

In the event that AML discovers an injured or dead marine mammal and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), AML would report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS Alaska Stranding Hotline and/or by email to the Alaska Regional Stranding Coordinator, within 24 hours of the discovery. AML would provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network.

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be “taken” through harassment, NMFS considers other factors, such as the likely nature of any responses (*e.g.*, intensity, duration), the context of any responses (*e.g.*, critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS’s implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the environmental baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

To avoid repetition, the discussion of our analyses applies to all the species listed in Table 6, given that the anticipated effects of this activity on these different marine mammal stocks are expected to be similar. There is little information about the nature or severity of the impacts, or the size, status, or structure of any of these species or stocks that would lead to a different analysis for this activity. Pile driving/removal and drilling activities have the potential to disturb or displace marine mammals. Specifically, the

project activities may result in take, in the form of Level A harassment and Level B harassment from underwater sounds generated from pile driving and removal and DTH drilling. Potential takes could occur if individuals of these species are present in the ensonified zone when these activities are underway.

The takes from Level A and Level B harassment would be due to potential behavioral disturbance, Temporary Threshold Shift (TTS), and PTS. No mortality is anticipated given the nature of the activity and measures designed to minimize the possibility of injury to marine mammals. Level A harassment is only anticipated for humpback whales, minke whales, Dall's porpoise, harbor porpoise, and harbor seal. The potential for harassment is minimized through the construction method and the implementation of the planned mitigation measures (see **Mitigation** section).

The Level A harassment zones identified in Table 7 are based upon an animal exposed to impact pile driving five piles per day. Considering duration of impact driving each pile (up to 15 minutes) and breaks between pile installations (to reset equipment and move pile into place), this means an animal would have to remain within the area estimated to be ensonified above the Level A harassment threshold for multiple hours. This is highly unlikely given marine mammal movement throughout the area. If an animal was exposed to accumulated sound energy, the resulting PTS would likely be small (*e.g.*, PTS onset) at lower frequencies where pile driving energy is concentrated. Nevertheless, we authorize a small amount of Level A take for five species which is considered in our analysis.

Behavioral responses of marine mammals to pile driving and removal at the Dock, if any, are expected to be mild and temporary. Marine mammals within the Level

B harassment zone may not show any visual cues they are disturbed by activities (as noted during modification to the Kodiak Ferry Dock) or could become alert, avoid the area, leave the area, or display other mild responses that are not observable such as changes in vocalization patterns. Given the short duration of noise-generating activities per day and that pile driving and removal would occur on 8 days across 4-5 months, any harassment would be temporary. In addition, AML would not conduct pile driving or removal during the spring eulachon and herring runs, when marine mammals are in greatest abundance and engaging in concentrated foraging behavior. There are no other areas or times of known biological importance for any of the affected species.

In addition, although some affected humpback whales and Steller sea lions may be from a DPS that is listed under the ESA, it is unlikely that minor noise effects in a small, localized area of habitat would have any effect on the stocks' ability to recover. In combination, we believe that these factors, as well as the available body of evidence from other similar activities, demonstrate that the potential effects of the specified activities will have only minor, short-term effects on individuals. The specified activities are not expected to impact rates of recruitment or survival and will therefore not result in population-level impacts.

In summary and as described above, the following factors primarily support our determination that the impacts resulting from this activity are not expected to adversely affect the species or stock through effects on annual rates of recruitment or survival:

- No mortality is anticipated or authorized;
- Authorized Level A harassment would be very small amounts and of low degree;

- AML would avoid pile driving and removal during peak periods of marine mammal abundance and foraging (*i.e.*, March 1 through May 31 eulachon and herring runs);
- AML would implement mitigation measures such as vibratory driving piles to the maximum extent practicable, soft-starts, and shut downs; and
- Monitoring reports from similar work in Alaska have documented little to no effect on individuals of the same species impacted by the specified activities.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the monitoring and mitigation measures, NMFS finds that the total marine mammal take from the planned activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted above, only small numbers of incidental take may be authorized under Section 101(a)(5)(D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals.

Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

The amount of take NMFS authorizes is less than one-third of any stock's best population estimate. These are all likely conservative estimates because they assume all

pile driving occurs the month which has the highest marine mammal density and assumes all takes are of individual animals which is likely not the case. The Alaska stock of Dall's porpoise has no official NMFS abundance estimate as the most recent estimate is greater than 8 years old. Nevertheless, the most recent estimate was 83,400 animals and it is highly unlikely this number has drastically declined. Therefore, the 20 authorized takes of this stock clearly represent small numbers of this stock. The Alaska stock of minke whale has no stock-wide abundance estimate. The stock ranges from the Bering and Chukchi seas south through the Gulf of Alaska. Surveys in portions of the range have estimated abundances of 2,020 on the eastern Bering Sea shelf and 1,233 from the Kenai Fjords in the Gulf of Alaska to the central Aleutian Islands. Thus there appears to be thousands of animals at least in the stock and clearly the two authorized takes of this stock represent small numbers of this stock.

Based on the analysis contained herein of the planned activity (including the planned mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

In order to issue an IHA, NMFS must find that the specified activity will not have an "unmitigable adverse impact" on the subsistence uses of the affected marine mammal species or stocks by Alaskan Natives. NMFS has defined "unmitigable adverse impact" in 50 CFR 216.103 as an impact resulting from the specified activity: (1) That is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by: (i) Causing the marine mammals to abandon or avoid hunting

areas; (ii) Directly displacing subsistence users; or (iii) Placing physical barriers between the marine mammals and the subsistence hunters; and (2) That cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met.

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. As discussed above, subsistence harvest of harbor seals and Steller sea lions comprise less than 1 pound (0.45 kg) per capita of all resources harvested by Haines residents, so the area is not important for subsistence hunting. The short-term, relatively low-impact, Level A and Level B harassment takes resulting from construction activities associated with the Lutak Dock project will have no impact on the ability of hunters to harvest marine mammals. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act (ESA)

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA: 16 U.S.C. 1531 *et seq.*) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS consults internally, in this case with the Alaska Region Protected Resources Division Office, whenever we propose to authorize take for endangered or threatened species.

NMFS Alaska Region issued a Biological Opinion to NMFS Office of Protected Resources on April 13, 2020, which concluded the issuance of an IHA to AML is not

likely to jeopardize the continued existence of Western DPS Steller sea lion (*Eumetopias jubatus*) or the Mexico DPS of humpback whales (*Megaptera novaeangliae*) and not likely to adversely affect sperm whales (*Physeter macrocephalus*).

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216-6A, NMFS must review our action (*i.e.*, the issuance of an incidental harassment authorization) with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 (incidental harassment authorizations with no anticipated serious injury or mortality) of the Companion Manual for NOAA Administrative Order 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has determined that the issuance of the IHA qualifies to be categorically excluded from further NEPA review.

Authorization

NMFS has issued an IHA to AML for conducting the Lutak Dock project in Haines, Alaska between Jun 15, 2020 and June 14, 2021, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

The final IHA can be found at <https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act>.

Dated: April 16, 2020.

Donna S. Wieting,

Director, Office of Protected Resources,

National Marine Fisheries Service.

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